

PUBLIC SERVICE COMMISSION OF WISCONSIN

Memorandum

May 9, 2007

TO: The Commission

FROM: Robert Norcross, Division Administrator
Donna Holznecht, Assistant Administrator
Dan Sage, Assistant Administrator
Anne Vandervort, Dockets Coordinator
Gas and Energy Division

RE: Joint Application of Wisconsin Gas LLC and Wisconsin
Electric Power Company, as Gas Public Utilities, for
Authority to Construct a Natural Gas Line in Brown,
Calumet, and Outagamie Counties, Wisconsin, for the
Purpose of Connecting Their Existing Natural Gas
Distribution Systems in the Appleton, Kimberly and
Combined Locks Areas to a Proposed Expansion of the
Guardian Pipeline 5-CG-103

6650-CG-220

Application of Wisconsin Gas LLC, as a Gas Public Utility,
for Authority to Construct Natural Gas Lines in Dodge and
Washington Counties, Wisconsin, for the Purpose of
Connecting its Existing Natural Gas Distribution Systems in
the Hartford and West Bend Areas to a Proposed Expansion
of the Guardian Pipeline

6690-CG-160

Application of Wisconsin Public Service Corporation, as a
Gas Public Utility, for Authority to Construct Four Natural
Gas Lines and Related Facilities in Brown, Calumet, Fond
du Lac, Outagamie, and Sheboygan Counties, Wisconsin,
for the Purpose of Providing Connections Between a
Proposed Expansion of the Guardian Pipeline and Existing
Wisconsin Public Service Corporation Natural Gas
Distribution Systems in the Plymouth and Sheboygan Areas,
the Chilton Area, The Denmark Area and the Green Bay
Metropolitan Area

BRIEFING MEMORANDUM

STATEMENT OF THE PROCEEDING

This proceeding jointly considers the applications filed by Wisconsin Gas LLC (WG), Wisconsin Electric Power Company (WEPCO), and Wisconsin Public Service Corporation (WPSC) to construct natural gas lines to connect their existing utility distribution systems to a proposed expansion of the Guardian Pipeline (Guardian II). Guardian Pipeline LLC's proposal to construct this 110-mile extension of its interstate pipeline from its terminus near Ixonia, Wisconsin to the Green Bay, Wisconsin area is currently being reviewed by the Federal Energy Regulatory Commission (FERC).

The Guardian II project, along with the connecting lateral projects (Laterals), would add about 577,000 decatherms (Dth) per day of capacity to the state of Wisconsin. If Guardian II and the Laterals are approved for construction, the projected in-service date is November 1, 2008.

The lateral gas lines proposed in the three utility applications total about 85 miles and include the following projects:

- Fox Valley project (05-CG-103) – WG and WEPCO would jointly construct a 13-mile lateral to connect their Kaukauna, Kimberly, Little Chute, Combined Locks, and Appleton distribution systems to the new pipeline.
- Hartford/West Bend project (6650-CG-220) – WG would construct a 10-mile lateral to connect its distribution systems in the Hartford and West Bend areas to the new pipeline. Additionally, a 4-mile gas line would be constructed to interconnect the Hartford and West Bend distribution systems.
- Sheboygan project (6690-CG-160) – WPSC would construct a 33-mile lateral to connect its distribution systems in the Plymouth, Kohler, and Sheboygan areas to the new pipeline.

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- Chilton project (6690-CG-160) – WPSC would construct a 2-mile lateral to connect its Chilton distribution system to the new pipeline.
- Denmark project (6690-CG-160) – WPSC would construct a 14-mile lateral to connect its distribution system in the Denmark area to the new pipeline.
- Southwest Green Bay project (6690-CG-160) – WPSC would construct an 8-mile lateral to connect its distribution systems in the De Pere, Ashwaubenon, and Green Bay areas to the new pipeline.

Additionally, WPSC would connect to the new terminus of Guardian Pipeline at WPSC's existing West Green Bay metering station. Modifications to the metering station require construction authorization and are included in docket 6690-CG-160.

The total estimated cost of all of the Laterals is about \$116.1 to \$117.7 million.¹ WG filed its application to build the Hartford/West Bend lateral under docket 6650-CG-220 on October 5, 2006. The estimated cost of the Hartford/West Bend lateral is \$17.2 million, which includes the incremental costs of horizontal directional drilling of waterways that WG did not include in its initial proposal. WG and WEPCO filed their joint application to construct the Fox Valley lateral under docket 05-CG-103 on October 13, 2006, at an estimated cost of \$23.9 to \$25.5 million, depending upon the route selected. WPSC filed its application to construct its four laterals under docket 6690-CG-160 on October 27, 2006, at an estimated cost of \$75 million.

¹ The cost of the Hartford/West Bend lateral and the Fox Valley lateral could be increased by approximately \$96,000 and \$320,000, respectively, if the Commission determines it is appropriate for WG and WEPCO to install pig launchers and receivers at the time of original construction.

A technical hearing was held on March 15, 2007. Public hearings were held in De Pere and Fond du Lac on March 20 and March 21, 2007. Intervenors in these dockets include the applicant utilities (Utilities), ANR Pipeline Company (ANR), Wisconsin End-User Gas and Electric Association and Wisconsin Paper Council (WPC). In addition, many potentially affected landowners and utility customers testified at the hearings and filed written comments.

The applications in these dockets seek the issuance of a certificate of authority. The statutory standard requirement for Commission approval is found at Wis. Stat. § 196.49(3).

- (b) The commission may refuse to certify a project if it appears that the completion of the project will do any of the following:
 - 1. Substantially impair the efficiency of the service of the public utility.
 - 2. Provide facilities unreasonably in excess of the probable requirements.
 - 3. When placed in operation, add to the cost of service without proportionately increasing the value or available quantity of service unless the public utility waives consideration by the commission, in the fixation of rate, of such consequent increase of cost of service.
- (c) The commission may issue a certificate for the project or any part of the project which complies with the requirements of this section, or the commission may attach to the issuance of its certificate such terms and conditions as will ensure that the project meets the requirements of this section. The issuance of a certificate under this section shall not be a condition precedent to the exercise of eminent domain under ch. 32.

This briefing memorandum addresses the application and associated record from an economic perspective, and also considers routing issues which include environmental and siting concerns.

ECONOMIC-RELATED ISSUES

Background

The Utilities presented an analysis of the need for additional interstate gas pipeline capacity into Wisconsin. The Utilities have subscribed to 537,200 Dth per day of the new

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Guardian capacity that would be added to Wisconsin. The proposed Guardian II and Laterals projects are needed to accommodate growth in natural gas demand, enhance the security and reliability of natural gas deliveries, and provide pipeline competition where there is none today. (Ex. 4, Part 13) Part of the needs analysis reflects the impact of the original construction of the Guardian Pipeline. That project added 750,000 Dth per day of additional capacity into Wisconsin in 2002. At that time, it was expected that there would be excess capacity into the future; however, that capacity, as well as an additional 200,000 Dth per day added by ANR and Northern Natural pipelines since the original Guardian Pipeline's construction, is effectively sold out. The need for the additional capacity that the proposed Guardian expansion would add in Wisconsin has not been disputed by any party to the proceeding.

The Utilities' decision to contract with Guardian for interstate pipeline service and to construct and own the connecting laterals was the end result of their Request for Proposal (RFP) that was issued in November 2004. The Utilities requested bidders to submit proposals by January 31, 2005, providing at least 437,000 Dth per day of capacity to Ixonia and at least 337,200 Dth per day of capacity to Green Bay and various points between.² The bidders were encouraged to submit proposals that priced capacity with and without the bidders assuming responsibility to construct the laterals connecting to the Utilities' distribution systems. (Tr. 512; ANR Br. pp. 5-6) The Utilities accepted the bid by Guardian on February 3, 2006.

On August 8, 2006, and revised on October 10, 2006, ANR made unsolicited proposals to the Utilities to provide short haul transportation services from an interconnection with Guardian

² In a March 4, 2005, e-mail to the bidders, the Utilities requested bidders to increase the capacity available to various gate stations between Ixonia and Green Bay by 100,000 Dth to 437,200 Dth per day, because it became evident during a pre-submission meeting with the bidders that building this additional capacity would result in a lower cost option.

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II to existing points of interconnection between ANR and the Utilities' distribution systems.

ANR proposed that its short haul transportation service be substituted for the Utilities' construction of the Guardian II connecting laterals.

The positions of the principal parties (the Utilities and ANR), can be summarized as follows:

- The Utilities believe that construction of the Laterals is consistent with the public convenience and necessity. The Laterals would not result in impairment of service, unreasonably excessive capacity, or additional costs disproportionate to the incremental value and quantity of service provided by the project. (WEPCO/WG Br. p. 3) The Laterals would bring needed pipeline capacity to Wisconsin at competitive rates, improve the ability for future load growth, and increase the reliability of service. (WPSC Br. pp. 5-11).
- ANR, on the other hand, believes that the Laterals are not necessary because its calculations show that there are less costly alternatives, which would maintain the competitive and reliability benefits the Utilities claim would result from the Laterals. ANR has offered to provide short haul transportation service, which it considers to be the same service as the Laterals, at a much lower cost and with less disruption to the environment. (ANR Br. p. 3)

In the most recent gas supply plan reviews for the Utilities, dockets 6630-GP-109, 6650-GP-109 and 6690-GP-109, the Commission found that it was reasonable for the plans to incorporate the assumption that additional capacity would be available from the Guardian II

expansion. The supply plan approvals were conditioned on the Utilities receiving approval for the Laterals construction applications now before the Commission.

No party has argued that the proposed Guardian II expansion is unnecessary, however, ANR has questioned whether the proposed lateral construction and ownership by the Utilities is the most reasonable way to access the Guardian capacity. Therefore the economic-related issues for the Commission to consider are:

1. Is it reasonable for the Utilities to construct and own the laterals connecting to the Guardian Pipeline?
2. Are the cost analyses and allocations presented by the Utilities reasonable?

The Utilities' consultant, P. Jon Wilems prepared extensive analyses comparing the costs of the proposed Guardian II project and the Utilities' construction of the Laterals versus the alternative proposals of ANR. Mr. Wilems' testimony and exhibits address the need for Guardian II (Ex. 4, Part 13); the RFP process employed by the Utilities to address their need for interstate pipeline transportation capacity (Ex. 5, Part 1); and the Gas Savings Report, which compares the Utilities' gas costs and other attributes of Guardian II versus ANR's various proposals. (Ex. 12, 20 and 21) Mr. Wilems also prepared separate economic analyses that address matters raised by ANR. (Tr. 404-408; Ex. 26, 31 and 33)

ANR's consultant, Barry E. Sullivan prepared economic analyses similar to Mr. Wilems' Gas Savings Report with the intent to address several flawed assumptions thought to be contained in Mr. Wilems' analyses. (Tr. 656-663; Ex. 39 and 40)

Analysis

The record in this case presents two ways for the Utilities to connect their distribution systems to the Guardian II expansion project: construction of the Laterals or contracting with ANR for short haul service on existing ANR facilities. (WEPCO/WG Br. p. 15) The ANR short haul proposal would require contracts with ANR separate from contracts with Guardian to accomplish the delivery of gas into the Utilities' distribution systems. If the Commission rejects the Utilities' applications, the ANR alternative may or may not be pursued by the Utilities.

The economic-related issues are discussed in more detail below, organized into five topical areas as follows: Cost, Allocation, Competitive and Other Benefits, Capacity-Related, and Miscellaneous.

Cost

There are two views of the cost of these two alternatives. ANR contends that on a net present value basis, the Laterals would cost a combined \$242 million more than the ANR short haul transportation option;³ and this cost includes a subsidy of \$172 million from utility transportation customers who would not use the Laterals.⁴ (ANR Br. pp. 3 and 10) Mr. Sullivan testified for ANR that the Utilities' economic analyses are seriously flawed. The analyses understate the project's operation and maintenance (O&M) expenses by excluding some variable costs and inflation effects. The analyses also assume that ANR would increase its rates to the current ML-7 tariff rates after the initial term of the contract; however, ANR witness, Gary C. Charette testified that ANR's proposal was intended to be extended at the agreed-to offered rates. (Tr. 69-70)

³ The combined cost includes the customers of both WEPCO/WG and WPSC.

⁴ Again, this amount includes customers of WEPCO/WG, as well as WPSC.

The Utilities responded that contracting for ANR short haul transportation service would cost between \$23.1 million to \$55.4 million, between \$18.8 million to \$42.8 million, and between \$29.4 million to \$54 million more than constructing the Laterals for WEPCO, WG, and WPSC system sales customers, respectively.⁵ (WEPCO/WG Br. p. 17; Ex. 12, App. III)

ANR contends that the Utilities' analyses understate the cost of the Laterals by (1) underestimating O&M expenses, (2) failing to include all variable costs, and (3) not adjusting the O&M expenses for inflation. (Tr. 658-659; ANR Br. pp. 12-13)

In response to ANR, Mr. Wilems prepared additional economic analyses to show the effect of including the ANR criticisms that the Utilities considered to have some degree of merit. (Tr. 404-405) Using these assumptions, the Laterals save between \$24 to \$58 million, \$20 to \$45 million, and \$28 to \$58 million over ANR's short haul proposal for WG, WEPCO, and WPSC system sales customers, respectively. (WEPCO/WG Br. pp. 19-24; WPSC Br. p. 16) Commission staff witnesses testified that the Utilities' estimates for O&M expenses were reasonable (Tr. 85-86 and 713-715). Commission staff further testified that ANR's estimates of O&M expenses were grossly overstated (Tr. 715). WEPCO/WG's cost analysis shows that even if it doubles the original estimate of O&M expenses, its proposed laterals are still less expensive than the ANR offer. (WEPCO/WG Br. p. 24; Ex. 31 and 33, Cases d and e)

ANR also takes exception to the fact that some of the Utilities' cost analyses assume that the rates offered by ANR for short haul transportation would increase after the initial ten-year term of the contract. ANR contends that this is incorrect, and that it intends to allow the Utilities

⁵ The reason for the range of values is that Mr. Wilems' discounted present value analysis comparisons were varied to use different sets of assumptions regarding future rates available from ANR, and for WEPCO/WG, future system enhancements needed in the Fox Valley and Hartford/West Bend areas. The net present value analysis uses a 5 percent discount rate, which is consistent with the analysis used in the first Guardian Pipeline project.

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to extend their contracts at the agreed-to offered rates. WEPCO/WG contends that ANR's tariff and FERC rules do not permit such an extension; ANR responds that this is incorrect. ANR believes that its tariff allows such an extension at a discount and, even if it did not, ANR could apply to FERC for such authority and receive a ruling in short order. (ANR Br. pp. 13 and 14)

The last point made by WEPCO/WG regarding the offer by ANR to extend the discounted short haul contracts is that it was an oral representation and the written ANR proposal did not contain an evergreen provision but, rather, a right of first refusal which would have required a renewing shipper to match the highest bid for the capacity. (WEPCO/WG Br. pp. 24 and 25)

Allocation

If the Laterals are built, actual cost allocation amongst the various customer classes would be determined in individual utility rate cases. However, in these construction dockets it is appropriate to address an allocation method for purposes of determining the reasonableness of the project. The Utilities state that, if the Laterals are built, it is appropriate to allocate the costs to all customers, including transportation customers. The Utilities believe it is proper for transportation customers to be allocated a portion of the costs because they would benefit from (1) the pipeline service competition between ANR and Guardian, (2) paying lower rates for interruptible and secondary transportation services, (3) reduced likelihood of service interruptions, and (4) reduced exposure to the increasing costs of new capacity. (WEPCO/WG Br. pp. 26-27; WPSC Br. pp. 12-13) To allocate the costs of the Laterals amongst customers, the Utilities used throughput of all system sales and transportation customers.

WEPCO/WG states that its Exhibit 33 shows that even if system sales customers are allocated 100 percent of the costs of the proposed WEPCO/WG laterals, and if WEPCO/WG's project costs were higher, it is still more economical than the ANR offer. (WEPCO/WG Br. p. 29)

ANR argues that by having the Utilities build the Laterals, part of the cost of the Guardian II project would be borne by transportation customers of the Utilities that may not want or need the laterals. With this resulting subsidization by the Utilities' transport customers,⁶ the rates and resulting choices facing these transportation customers would be distorted and an inefficient market would be created. ANR argues that it is not in the public interest to require transportation customers to pay for facilities that they may never use. (ANR Br. pp. 16-17)

The Utilities believe that ANR's claim of a subsidy from transportation customers to system sales customers is incorrect because long established Wisconsin Commission policy allocates facility costs between transportation customers and system sales customers, and because ANR assumes that transportation customers would receive no benefits from the Laterals. (WEPCO/WG Br. p. 26)

Commission staff testified that the allocation of costs to transportation customers is reasonable and is in keeping with past Commission practice. (Tr. 86, 87, and 712) In addition, it is likely that benefits of Guardian II would accrue to transportation customers even if they do not directly use the proposed laterals. As overall system capacity increases, there should be fewer service interruptions and the availability of a second interstate pipeline may enhance the ability of all shippers to negotiate favorable contract terms. In docket 6650-CG-194, the economic

⁶ ANR says that Mr. Wilems' net present value analyses show that the Utilities' transportation customers may be required to pay \$172 million during the life of the laterals.

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analyses supporting WG's construction of the connecting lateral to the original Guardian Pipeline also used an allocation of the project's costs based on throughput of all customers, including transporters. This allocation was again used in the cost-of-service studies in WG's rate case after completion of the lateral's construction. (Tr. 712-713)

WPC witness, Mr. Gustafson testified that fourteen of its members are geographically located in northeast Wisconsin in areas directly impacted by the Laterals applications. These members are transporters of gas, not system sales customers. WPC supports approval of the application because it believes the expansion of the Guardian Pipeline into the metropolitan Milwaukee area and northward into the Fox Valley would help assure reliable, affordable access to natural gas for the paper industry in the northeastern area of the state. While the capital costs of the expansion are significant, estimated at \$53 million for the paper industry, WPC believes that in the long-term, there would be a net, positive economic benefit if the Utilities' applications are approved. (Tr. 8-10)

Competitive and Other Benefits

WPSC argues that the Commission should certify the proposed Laterals project because it would bring needed pipeline capacity to eastern and northeastern Wisconsin at competitive rates; provide the ability to add additional pipeline capacity in the future at competitive rates; bring the benefits of competition for interstate pipeline services to eastern and northeastern Wisconsin; improve the ability to serve future load growth in a timely manner; and increase the reliability of service in eastern and northeastern Wisconsin through the presence of a second interstate pipeline supply. (WPSC Br. pp. 5-11)

WPSC argues that ANR's short haul proposal offers no long-term rate certainty; would take away the pipe-on-pipe competition that Guardian II provides; would give little room for growth; does not address existing pipeline constraints in certain areas; does not provide many of the key reliability benefits of the Guardian II project; would not reduce the risk of future curtailments for interruptible customers; would result in system customers subsidizing transportation customers; and would impose a significantly higher comparative burden on system sales customers than constructing the Laterals. (WPSC Br. pp. 15-19)

ANR states that if Guardian II does provide pipeline competition and increase gas transmission system reliability, ANR's short haul transportation proposal would not diminish any of those benefits. (ANR Br. pp. 11-15)

WEPCO/WG indicated that if the ANR short haul offer were accepted, fuel and commodity charge savings resulting from Guardian's lower transportation rates would not be available to transportation customers in the Fox Valley and Hartford/West Bend areas. Transportation customers in the Fox Valley and Hartford/West Bend area would lose direct access to Guardian; and thus, lose the expected benefit of pipe-on-pipe competition, reduced rates for firm transportation service. (Tr. 515-516; Ex. 20 at 19 and Ex. 21 at 19; WEPCO/WG Br. p. 18)

Capacity-Related

The Utilities presented an analysis of the need for additional interstate gas pipeline capacity into Wisconsin. The need has not been disputed by any party to the proceeding. Part of the needs analysis reflects the impact of the construction of the original Guardian Pipeline. That project added 750,000 Dth per day of capacity into Wisconsin in 2002. Even with that Guardian

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addition, and expansions of the ANR system and the Northern Natural Gas system in 2007 by another 200,000 Dth per day, firm interstate gas transportation capacity in Wisconsin is effectively sold out. The Utilities point to this as further evidence that capacity into Wisconsin is constrained. (Tr. 345)

WEPCO/WG indicates that because ANR's short haul offer would use existing ANR facilities, it would provide only 15,582 Dth per day of incremental capacity in the Fox Valley area and no new capacity in the Hartford/West Bend area. If WEPCO and WG accepted ANR's short haul offer, they would still need additional capacity in the Fox Valley area (and incur additional construction costs) in four years. The Laterals would provide 129,700 Dth per day in the Fox Valley area and 62,100 Dth per day in the Hartford/West Bend area, thus relieving capacity constraints in both areas. Accepting ANR's offer would do nothing to relieve existing constraints, and thus, WEPCO/WG would still need to build facilities in these areas. (Tr. 515; WEPCO/WG Br. p 18) In its brief, ANR responds that it offered to provide the same level of service in the Fox Valley area as the Laterals. (ANR Br. p. 14)

WEPCO/WG stated that if the ANR short haul offer were accepted, it would have impacts elsewhere on its system. The reentry flows from Guardian to ANR would cause ANR's system to be at or near capacity in eastern Wisconsin, and this would reduce projected savings for WEPCO/WG transportation customers behind gates not directly connected to Guardian's system. (Tr. 515-516; Ex. 20 at 19 and Ex. 21 at 19; WEPCO/WG Br. p. 18)

Miscellaneous

ANR points out that acceptance of its short haul offer would mean less environmental and landowner disruption because the Laterals would require about 85 miles of new gas line and

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facilities construction, while its short haul offer would require looping of only 14.2 miles of its pipeline. (Tr. 63 and 64) ANR also points out that acceptance of the short haul offer would allow the Utilities to continue to aggregate all of their ANR capacity and to balance deliveries more effectively and at lower costs. (Tr. 64) ANR argues that the proposed Laterals should be considered a necessary part of the Guardian expansion's integrated interstate transportation pipeline system rather than be considered needed by each utility's integrated system.

ANR suggests that the Commission should either (1) deny the Utilities' applications to construct and own the Laterals, and seek as an alternative, ANR's short haul proposal or construction of the laterals by Guardian; or (2) as a condition of approval of the applications, prohibit the Utilities from recovering the cost of the Laterals in the distribution rates of any transportation customers that do not use the laterals. (ANR Br. p. 17)

The Utilities point out that the rates available from Guardian are dependent on the aggregate of the volumes being acquired by all three utilities, and it is not clear that this joint participation would be possible in the future. (Ex.5, Part 1 p. 9)

ROUTING AND CONSTRUCTION ISSUES

Prior to the filing of the applications, a great deal of work was done to develop potential routes for the gas lines. The Utilities worked with Commission staff and Wisconsin Department of Natural Resources (DNR) staff to develop proposed routes by evaluating important factors including environmental impacts, landowner impacts, engineering, and safety. Existing corridors, such as transmission lines and roadways, were followed for considerable portions of the routes. The availability of many existing corridors aided in narrowing down the route alternatives to one proposed route for each of the gas lines, except for the Fox Valley lateral. For

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the Fox Valley lateral, two route alternatives were included in the application for the eastern segment of the gas line.

The Utilities have worked with and continue to work with potentially affected landowners to minimize any adverse impacts. WG has agreed to several substantial changes to its proposed route for the Hartford/West Bend lateral in response to landowner concerns, which are described below. A landowner along the WPSC Sheboygan lateral has proposed significant changes in the proposed route, which are summarized for the Commission's consideration.

The project applications include numerous proposed construction methods and environmental mitigation practices which would be followed by the utilities. Some of these were modified or clarified during the hearing. Additionally, WG agreed to changes in its construction methods for crossing Butler Creek and Woodland Creek and their associated wetlands along the Hartford/West Bend lateral.

Proposals have been made regarding route flexibility, flexibility in pipe size, and installation of pig launchers and receivers, which are summarized below.

Routing

Route for the Eastern Segment 1 of the Fox Valley Lateral

There are two routes in the application for the eastern part (Segment 1) of the Fox Valley lateral. The northernmost route is WEPCO/WG's preferred route. It starts at the proposed Guardian Pipeline meter station and proceeds due east until it intersects Kavanaugh Road, then 1,300 feet south to Weiler Road, then east to County Trunk Highway (CTH) CE, and then east approximately 8,000 feet along CTH CE to where the 20-inch gas line ends where it crosses

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Kankapot Creek. This route utilizes approximately 12,000 feet of public road right-of-way (ROW) and 10,500 feet of private easement. This route also goes past Kaukauna High School.

The alternate southern route option starts where the proposed Guardian Pipeline crosses an existing American Transmission Company LLC electric transmission line. The gas line runs west along the electric line corridor to a point about 7,000 feet west of Harwood Road. From there the gas line runs north to CTH CE in private easement, except for approximately 1,300 feet that is along Speedway Lane. The alternate route has a total length of approximately 29,000 feet, of which 1,300 feet is in existing road ROW.

WEPCO/WG prefer the northern route because it is shorter and less costly. Commission staff has testified that it prefers the alternate southern route for safety reasons. The alternate route is approximately 6,000 feet longer than WEPCO/WG's preferred route. (Tr. 762-763, 43-49, 36)

Route on Klink Property – Hartford/West Bend Lateral

The proposed Hartford/West Bend lateral crosses a stretch of land belonging to the Klink Trust and the Joseph Klink Trust (the Klink or Klink Family property). Members of the Klink family state that the proposed route crosses the property through the middle of currently farmed fields, but the family is planning to develop the property for residential lots. The route as proposed would hinder this development. Family members have requested WG alter the route to accommodate their plans and have offered a number of suggested route modifications. (Tr. 845-856, 856-872, 892-895, 895-897, 898; Ex. 59, 60, 65, and 66)

A WG witness stated that WG is willing to modify the route, moving it southward to a 50-foot wide permanent easement on Klink property adjacent to the north side of Butler Road.

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This adopts a portion of one option suggested by the Klink family, but does not include the requested narrowing of the permanent easement or overlapping the permanent easement with the road ROW. (Tr. 910-911; WEPCO/WG Br. p. 13) In its Initial Brief on page 13, WG noted it would continue to work with the landowners to achieve a reasonable routing solution.

Route on Lueder, Sheldon, and Ziegelbauer Properties – Hartford/West Bend Lateral

The proposed Hartford/West Bend lateral crosses a stretch of land belonging to three adjacent landowners, Lueder, Sheldon, and Ziegelbauer. These landowners state that the proposed route crosses their properties through the middle of currently farmed fields, but that they are planning to build new buildings on the properties. Sheldon is also planning to convert his property to an organic berry farm. The route as proposed would conflict with the planned buildings and may hinder organic certification. The three landowners have requested that WG alter the route to accommodate their plans and have offered a number of route suggestions. (Tr. 872-879, 880-883, 887-890; Ex. 62 and 63)

A WG witness stated that WG is willing to modify the route, moving it to a 50-foot wide permanent easement adjacent to the north boundary of the Sheldon and Ziegelbauer properties, then continuing into the Lueder property. This adopts a portion of one option suggested by the three landowners, but does not include a suggested overlapping with the property to the north. (Tr. 910-911; WEPCO/WG Br. p. 13) In its Initial Brief on page 13, WG noted it would continue to work with the landowners to achieve a reasonable routing solution.

Route on Kohler Co. Properties – Sheboygan Lateral

In its application, WPSC proposed to install the easternmost portion of its gas line along State Trunk Highway (STH) 23. The portion of the gas line from Range Line Road to its eastern

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end at Erie Avenue was proposed to be adjacent to STH 23 on private property. The landowner on this portion of the route, the Kohler Co. (Kohler), has objected to this route in testimony.

Kohler has proposed that the gas line be routed within the highway ROW, specifically the south side of the highway ROW, which is used for recreation and includes a paved bike path. (Kohler Br. 1-9; Kohler Reply Br. 1-9)

Comments submitted in docket 6690-CG-160 by the Wisconsin Department of Transportation (DOT) indicate that the placement of the gas line within this particular ROW is not consistent with its current accommodation policy for freeways, but could be permitted in special or hardship situations. (Ex. 67 pp. 80-82)

WPSC testified that it is willing to modify the route consistent with Kohler's request if the DOT and the Federal Highway Administration would approve the use of the highway ROW. (Tr. 250; WPSC Reply Br. 11-12)

Although Kohler objects to the gas line being placed on Kohler property adjacent to STH 23 citing reasons of planned land use, nothing in the record indicates that the gas line could not be built along the originally proposed route. Commission staff testified that it would prefer the gas line be built adjacent to the highway on private easement, as originally proposed by WG, to limit the exposure to third party damage. (Tr. 754-755, 766-767)

Construction and Mitigation Practices

Overall Construction and Mitigation Practices – All Laterals

The project applications included numerous proposed construction methods and environmental mitigation practices. Some of these were updated or added to during the project review and hearing process. The reviews and evaluations of the proposals assumed these

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methods and practices would be followed. Unless specifically noted in this memo or the decision matrix, there is no dispute over their adoption and use.

To reflect these application commitments, it would be reasonable to include an order provision requiring that all construction and environmental mitigation methods included in the project applications, as modified during the project review and hearing process, be followed when constructing the proposed projects, unless specifically modified by the Commission's order or DNR permits. Also, it would be reasonable to include an order provision recognizing that the projects must be constructed in accordance with all applicable pipeline safety laws, including Wis. Admin. Code ch. PSC 135 and 49 CFR Parts 192 and 199.

Construction Practices to Reduce Oak Wilt Problems – All Laterals

The construction of the proposed laterals would require cutting and trimming of trees, including oaks. Oak trees are susceptible to a fungal disease known as oak wilt. The cutting and trimming of oak trees can contribute to the spread of the disease. A variety of tree cutting and trimming practices have been developed to help reduce the spread of oak wilt.

DNR recommends that the applicants be required to follow a set of oak wilt management practices described on DNR's website. (Tr. 723) A WEPCO/WG witness responded that the oak wilt management practices contained in Wis. Admin. Code § PSC 113.0511, which were developed for electric utility tree clearing and pruning activities, would be more appropriate than the general guidelines published on DNR's website. (Tr. 320-321, 334; WEPCO/WG Br. p. 10) The DNR staff noted that the Wis. Admin. Code § PSC 113.0511 requirements for electric utilities are similar to the DNR's website guidelines for work in urban areas, but are less restrictive for work in rural areas (requiring protection of exposed tree surfaces rather than

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limiting cutting or trimming at certain times of the year). (Tr. 739) DNR prefers that its guidelines be followed. The principal concern expressed by WEPCO/WG is the greater potential for project delays in rural areas if the website guidelines were followed due to the periods of restricted cutting or trimming.

Construction Method for Crossing Butler Creek and Wetlands – Hartford/West Bend Lateral

The Hartford/West Bend lateral requires a crossing of Butler Creek and associated wetlands. WG initially proposed crossing Butler Creek and wetland by using an open trench method. DNR permit staff testified that the proposed open trench crossing method may not be permissible. (Tr. 92-98) In rebuttal testimony, WG changed its proposal to use a horizontal directional drill (HDD) installation method in response to the DNR permissibility concerns. (Tr. 326-328; WEPCO/WG Br. pp. 8-9) DNR staff then noted that the WG modified crossing method using HDD installation is permissible. (Tr. 99)

Construction Method for Crossing Woodland Creek and Wetlands – Hartford/West Bend Lateral

The Hartford/West Bend lateral also requires a crossing of Woodland Creek and associated wetlands. Similar to Butler Creek, WG initially proposed crossing Woodland Creek and wetland using an open trench method (Alternative 1). In rebuttal testimony, WG changed its proposal to HDD installation (Alternative 2) in response to the DNR permissibility concerns. (Tr. 326-333; Ex. 11; WEPCO/WG Br. pp. 8-9) DNR permit staff noted in testimony that the initial WG proposed crossing method using open trenching (Alternative 1) may not be permissible, but that the WG-modified crossing method using HDD installation (Alternative 2) is permissible. (Tr. 92-98, 99-100)

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Construction using Alternative 2 would still require clearing of about two acres of woodland. DNR staff recommended that the route through the wooded area be shifted slightly to place the clearing at the woodland's edge rather than having it set back into the forest block. (Tr. 99-100, 732-733)

WG developed preliminary information on several potential route modifications that would avoid the need to cross the stream and wetland and to avoid any woodland clearing. Two of the options considered, Alternatives 4 and 5, both route the pipeline around the south end of the wetland/stream complex. The initial evaluation of these alternatives identified significant unknown issues with construction through an organic farm, which questioned their viability as options. (Tr. 328-333) DNR staff noted that while from a wetland and waterway perspective there was still a preference for choosing Alternative 4 or 5, the organic farm crossing could raise issues that make these alternatives not practicable. (Tr. 100)

An additional option in this area, Alternative 3, consisted of a long HDD under a wide portion of the wetland. This alternative was significantly more expensive than the other options evaluated, and no one recommended it be selected.

Miscellaneous

Route Flexibility – All Laterals

The applications provide detailed graphical representations showing the locations for the proposed gas lines. The evaluations of the projects were based on these described centerlines. It may be reasonable to provide the applicants some level of flexibility to make minor changes to the routes as depicted in the applications, either to accommodate landowner requests or to resolve a construction difficulty that may not yet be identified. WPSC, WEPCO/WG, and

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Commission staff all described possible route flexibility approaches in testimony. (Tr. 53, 118-119, 236-237) Commission staff's initial proposal included written landowner approval for all changes, including those less than 100 feet, which WEPCO/WG argued would unduly complicate minor changes. (WEPCO/WG Br. pp. 13-14) Commission staff does not object to WEPCO/WG's modification.

With the modification suggested by WEPCO/WG, all approaches appear to support three basic components:

- 1) Allow route changes up to 100 feet from the proposed route if no new landowners are affected and no sensitive resources are impacted,
- 2) Allow changes of more than 100 feet if no new landowners are affected, affected landowners grant written approval of the change, and no sensitive resources are affected,
- 3) Any other changes would require Commission-delegated approval by the Administrator of the Gas and Energy Division.

Pipe Size Flexibility – WPSC Laterals

WPSC requested the ability to change pipe diameter from that proposed in its application by one standard pipe size without requiring further Commission approval, if the more detailed or updated information used in final project design supports the increased size. (Tr. 235-236; WPSC Br. p. 20) Commission staff in testimony supported the request. (Tr. 767)

Pig Launchers and Receivers – Hartford/West Bend and Fox Valley Laterals

On both the WEPCO/WG Fox Valley lateral and the WG Hartford/West Bend lateral, the utilities are proposing to only allow for the future installation of pig launchers and receivers.

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Most of these lines are subject to the integrity management requirements of state and federal pipeline safety codes. These codes require the use of instrumented pigs, or an equivalent method, to evaluate the condition of the pipeline on a scheduled basis. The use of temporary launchers and receivers may be necessary in urban areas. However, it may be appropriate to require WG and WEPCO to install the appropriate launchers and receivers in the rural portions of their projects, such as the 20-inch Fox Valley segment and the Hartford/West Bend lateral, at the time of original construction. In addition, if an appropriate amount of ROW can be secured on the 16-inch Fox Valley segment, it should also be required to have launchers and receivers installed. (Tr. 52-53)

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